“The key to solving the problem of climate change will be innovation”

Bill Gates

“The Government of Vietnam supports this important initiative and proposes developing the necessary policy framework to facilitate its effective operation”

Vice Minister Mr. Tran Hong Ha from the Ministry of Natural Resources and Environment, Vietnam

“The Climate Innovation Center (CIC) has a role to play in transforming Kenya specifically to catalyze innovative technology among SMEs.”

Alex Alusa, Office of Prime Minister, Kenya

“Climate Innovation Centers will help private sector entrepreneurs to transform climate challenges into growth opportunities”

Andrew Steer, Special Envoy for Climate Change, The World Bank Group

“The Climate Technology Program has helped us develop a CIC to achieve the Gauteng government’s Green Economy objectives.”

McLean Sibanda, CEO, The Innovation Hub, South Africa
DEVELOPING COUNTRIES WILL DRIVE THE GROWTH OF GLOBAL CLIMATE TECHNOLOGY MARKETS

• A clean technology revolution will require a USD 100 billion investment annually in R&D to halve carbon emissions by 2050.

• Growth is increasingly driven by non-OECD countries, whose share of global investment in renewables grew from 29% in 2007 to 40% in 2008.

• The clean economy offers more opportunities and better pay for low- and middle-skilled workers than the national economy as a whole.

• The International Energy Agency predicts that over the next 25 years, 90% of the projected growth in global energy demand will come from non-OECD economies.

INNOVATION WILL TRANSFORM CLIMATE CHALLENGES INTO ECONOMIC GROWTH OPPORTUNITIES

• Innovation in water and irrigation technologies will help relieve the increased water stress caused by climate change for millions of people in Africa and elsewhere.

• Sustainable agricultural technologies deployed in Central and South Asia will help offset the projected 30% fall in crop yields in the region, due to climate change.

• Small and Medium Enterprises (SME) are economic engines for growth and jobs in developing countries. SMEs in Indonesia account for over 90 percent of the total workforce, and especially employ women and youth.

• Tens of millions of jobs will be created in renewable energy and energy efficiency sectors by 2020 with 10 to 40 fold increases in jobs in solar and biomass sectors respectively.
THE CLIMATE TECHNOLOGY PROGRAM

The Climate Technology Program (CTP) is housed at infoDev, a global technology and entrepreneurship program in the World Bank Group. The CTP supports the private sector in developing countries - targeting SMEs and entrepreneurs - to innovate novel technologies and business models to address local climate challenges. By supporting the stakeholder-driven development of innovative solutions, the CTP allows developing countries to mitigate emissions and increase climate resiliency while also actively and profitably participating in the global clean technology revolution. In addition to achieving climate and energy impacts, results are measured in new jobs and businesses created, helping countries achieve their green growth objectives.

The CTP’s flagship initiative is the development and implementation of country-level Climate Innovation Centers (CICs). The CICs are designed as locally owned and run institutions that provide a suite of services and venture financing that address the specific needs of local climate innovators and companies. At the global level, the CTP is providing linkages between CICs by facilitating market entry, access to information and financing for the private sector, while also offering important tools for policy-makers to measure and improve domestic climate innovation activities.

The CTP complements other climate efforts by providing a pipeline of viable companies and projects that can be further supported. By helping early-stage innovators overcome initial challenges, the CTP will provide viable investment opportunities for climate finance programs. The CICs can also link to the UN Climate Technology Center and Network (CTC&N) by providing expert institutions on the ground with excellent knowledge of local climate technology challenges.

SCALING-UP INFODEV’S CLIMATE TECHNOLOGY PROGRAM

The Climate Technology Program (CTP) continues to see strong demand from stakeholders and is now scaling up its activities.

- Governments see the CTP as a key tool to support domestic private sector participation in growing climate tech opportunities to achieve economic growth and job creation.
- Climate technology enterprises and entrepreneurs are eager for the investment and advisory services the CICs will provide for them to succeed.
- The CTP will catalyze innovations that leverage private investment at a ratio of 8 to 1.

The program’s expansion will develop new CICs in additional countries and launch a set of global activities to support the CICs and create market linkages. This builds on infoDev’s network and longstanding experience in technology entrepreneurship and innovation.
Improving access to clean water for 90,000 Ethiopian households

Providing 1400 MW in off-grid renewable energy access

Leveraging up to 8 times private sector investment

Delivering and facilitating financing to over 2,500 innovative companies

Mitigating up to 50M tons of CO2

Providing clean energy to an additional 35,000 homes in South Africa

Improving access to clean water for 90,000 Ethiopian households

Allowing 3,000,000 people including women and girls to be less vulnerable to the effects of climate change

Creating over 200,000 long term job opportunities

Achieving 75% company survival rate 3 years after exit from CICs

Leveraging up to 8 times private sector investment

THE CLIMATE TECHNOLOGY PROGRAM WILL DELIVER GLOBAL IMPACTS
DESIGNING THE CIC MODEL: IDENTIFYING GAPS IN EXISTING INSTITUTIONS

InfoDev and Bloomberg New Energy Finance analyzed 500 hundred private and public initiatives that support climate and clean energy innovation. These included centers of excellence, seed funds, technology accelerators, business incubators and other programs. The report found that only a few institutions provided holistic solutions to addressing the broad number of barriers preventing climate innovation in their countries. These included China’s Baoding New & High Tech Industrial Development Zone, the UK’s Carbon Trust and Brazil’s Center for Innovation, Entrepreneurship and Technology (CIETEC) at the University of Sao Paulo.

Climate change is affecting ecosystems around the world. Many of the impacts are being faced by the poorest nations. Changing climates are already causing irreversible effects on agriculture, water resources, forestry, society and industry. Furthermore energy access, security and price volatility are further constraining global economic growth.

There are many barriers to developing the new technologies needed to address climate change and achieve Green Growth. These barriers are more pronounced in developing countries. These barriers include gaps in appropriate financing, lagging technical and business capabilities, entrepreneurial capacity constraints and uncertain regulatory environments. Moreover, many developing countries lack the public and private sector bodies that support innovation.

While localization of existing technologies or the development of entirely new solutions can play an important role, successful commercialization in developing countries is often linked to new business models, processes or organizational approaches.
Without the required financing, business support, knowledge and associated networks, climate businesses often fall victim to the well-referenced ‘Valley of Death’. By investing in innovation, the public sector plays a key role in reducing the risk for private sector participation. This makes the path to commercial success faster and less costly for new market entrants.

Investing in innovation achieves multiple benefits. Research has shown that nearly all net job creation comes from innovative startup firms less than five years old. The climate technology sector also poses significant market opportunities for innovation. Needed investment in energy alone is USD45 trillion in the next 40 years.

Inclusive innovation in climate technologies is also particularly central to meeting the needs of the poor and marginalized. Women and girls’ contributions to climate sectors remain a vast untapped resource in terms of development. Moreover innovation has an important multiplier effect. Investing small amounts upfront leads to much larger environmental, social and economic impacts downstream.

By growing local and global markets for climate technology products and services, innovators in developing countries can seize the opportunity to be part of the greatest technology revolution of the 21st Century.
GLOBAL

The CTP will provide a range of global activities to serve the needs of private sector innovators in developing countries by providing access to the latest technologies, information, financing and expertise to participate in growing international climate sector opportunities. Country-level CICs will serve as delivery hubs for global activities coordinated by the CTP.

1. CIC DESIGN

CIC Design

The CTP will expand scoping and design activities to meet strong client country demand for CICs. The design of each CIC is tailored to the particular needs of each country. The detailed operational and financial plans for each Center are packaged in a business plan which is used as a blueprint for local implementation.

2. GLOBAL FINANCING

IGNITE Fund

Investing in Green Innovation and Technology Enterprise Fund

The CTP will mobilize and syndicate global funding for innovative technologies in the form of strategic applied R&D prizes, innovation prizes and seed investments. Global financing will address crucial funding gaps while offering deal-flow to public and private investors eager to support promising climate ventures in developing countries.

LOCAL

The CICs build local capacity and address barriers to innovation by offering a tailored suite of financing and services that support domestic SMEs. With the CIC’s assistance, innovative enterprises become more competitively and profitably involved in booming local and international cleantech markets - creating jobs and leading to economic growth.
The CTP will actively package lessons from individual CICs and provide cutting edge analytical products and policy toolkits on supporting private sector innovators. The experiences from the CICs will provide tremendous learning on climate innovation across multiple countries and regions.

### 3. EVIDENCE-BASED ANALYSIS

**Climate TRACK**

*Climate Technology Research, Analysis, Communication and Knowledge*

Via linkages to CICs, the CTP will link promising companies with global partners and expertise. Connecting entrepreneurs internationally to find suppliers, partners, financing and export markets is essential to growing a world-class business. The CTP will also establish three regional innovation networks in East Africa, North Africa and the Caribbean.

### 4. CONNECTING MARKETS

**MarketCONNECT**

CTP will provide client governments with a CIC-based Monitoring and Evaluation (M&E) tool to track domestic innovation progress. This product will be highly useful for policy makers to access timely data on R&D activity, employment numbers, technology impacts, and the involvement of women in local climate sectors.

### 5. MEASURING RESULTS

**Impact Xchange**

The CTP will provide client governments with a CIC-based Monitoring and Evaluation (M&E) tool to track domestic innovation progress. This product will be highly useful for policy makers to access timely data on R&D activity, employment numbers, technology impacts, and the involvement of women in local climate sectors.

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**VENTURE FINANCE**

- Proof-of-concept grants up to USD 50k
- Seed Capital Investments from USD 50k-1m
- Investor facilitation and syndication

**GOVERNMENT ADVISORY**

- Research on sector policy trends and best practice
- Engagement with government on SME policy issues
- Policy dialogues, roundtables and events

**BUSINESS ADVISORY & TRAINING**

- Business training, mentoring, access to professional services
- Technical training and skills development
- Education, seminars and events

**MARKET INTELLIGENCE**

- Access to databases on technologies, standards and suppliers
- Information on markets, competitors, potential partners
- Research, reports and analytics on sector trends

**ACCESS TO FACILITIES**

- Office space and services for entrepreneurs and start-ups
- Access to technical facilities to test and demonstrate products
THE CTP HARNESSES THE CREATIVE SPARK OF INNOVATIVE CLIMATE TECHNOLOGY ENTERPRISES

**KENYA**

IN KENYA, wind turbine manufacturer CraftSkillz produces up to twenty 150W turbines a year, employing up to 20 people. To expand, the company requires additional financing, design support and access to facilities.

**INDIA**

SUN AIR POWER in India is a hybrid renewable energy systems provider producing generators that harness both solar and wind power which is then stored in a battery for off-grid uses. Sun Air needs funding for technology development and proof-of-concept to improve product design.

**SOUTH AFRICA**

JABULANI HOLDINGS from South Africa has developed local alternatives to solar water heaters made from African-sourced materials. Jabulani is seeking USD1.6M to build and operate 4 factories, creating needed green jobs in the region.

**ETHIOPIA**

DVENTUS TECHNOLOGIES based in Addis Ababa, Ethiopia, houses an electronics lab and high-tech workshop where local engineering graduates are designing, developing and producing 1MW permanent magnet generators for wind turbines and other uses. They need assistance in accessing proof-of-concept funding to accelerate the product development process.

**GUATEMALA**

GUATEMALAN START-UP Ecofiltro produces water filters commercialized from domestic research and made with local materials. The company is seeking access to global partnerships to expand its franchise model. It has recently secured USD1m in venture financing as a result of infoDev's Access to Market activities.
LEVERAGING A HISTORY OF EMPOWERING ENTREPRENEURS

infoDev is a global partnership program in the Financial and Private Sector Development Network of the World Bank Group. Its mission is to enable innovative entrepreneurship for sustainable, inclusive growth and employment.

The CTP leverages infoDev’s ten-year track record of supporting domestic industry, in particular high-growth enterprises, to develop innovative Information and Communication Technologies (ICT) and business models. More recently, infoDev has applied this success to supporting innovation in both climate and agribusiness sectors.

infoDev has an existing network of over 400 incubators in 108 countries. These have incubated 25,000 firms, 75% of which still exist 3 years after leaving an infoDev incubator, leading to the creation of more than 250,000 jobs. This network gives infoDev access to a vast community of technologists, entrepreneurs, policymakers, financiers, academics, governments and donors.

Their shared vision includes enhanced business opportunities for small and medium enterprises, wealth generation, economic inclusion, and job creation as tools for poverty reduction, and sustainable growth of developing countries.

THE CTP COMPLEMENTS ONGOING AND FUTURE CLIMATE TECHNOLOGY PROGRAMS

The CTP complements other climate efforts by providing a pipeline of viable companies and projects that can be further supported. The CTP will provide viable investment opportunities for climate finance programs such as the Climate Investment Funds, carbon financing, International Financial Institution financing and the private sector. The CICs can also be affiliated with the UN Climate Technology Center and Network (CTC&N) by providing country-level expertise, knowledge and networks.
“The Climate Innovation Centre (CIC) has a role to play in transforming Kenya to a middle income country as called for in the Government’s Vision 2030. Specifically to achieve the essential technological advancement and catalyze innovative technology among SMEs.”

Alex Alusa, Office of Prime Minister, Kenya